Pierre NOIRET (ed.) - *Le Paléolithique supérieur européen. Bilan quinquennal 2006 - 2011,* Union Internationale des Sciences Préhistoriques et Protohistoriques, Commission VIII, ERAUL 130, Liège, 2013, p. 31-37.

# CROATIA

Ivor KARAVANIĆ*, Darko KOMŠO** & Nikola VUKOSAVLJEVIĆ***
**Dept. of Archaeology, Faculty of Humanities and Social Sciences, University of Zagreb, I. Lučića 3, 10000 Zagreb, Croatia*
ikaravan@ffzg.hr
***Archaeological Museum of Istria, Pula, Carrarina 3, 52000 Pula, Croatia*
komsodarko@gmail.com
****Dept. of Archaeology, Faculty of Humanities and Social Sciences, University of Zagreb, I. Lučića 3, 10000 Zagreb, Croatia*
nvukosav@ffzg.hr

## Introduction

Palaeolithic sites in Croatia are often mentioned in scientific literature, particularly due to important finds of fossil humans (Krapina, Vindja, Šandalja II) and due to material culture and Pleistocene fauna. In the last fifteen years we see more field surveys, excavations and analyses of Palaeolithic material. This article is a five-year report on Upper-Palaeolithic research in Croatia, for the period 2006-2010, prepared for the Commission for Upper Palaeolithic of International Union for Prehistoric and Protohistoric Sciences (UISPP).

Research of Upper Palaeolithic in Croatia was predominantly done in the Mediterranean part of Croatia, on the Istrian peninsula and in Dalmatia, with the exception of two sites located in the hinterlands. Research overview will be divided in three geographical groups: Istria, Dalmatia and hinterlands encompassing Gorski Kotar, Lika and Hrvatsko Zagorje regions.

## Research in Istria

### Ivšišće

Ivšišće is an open-air site in the area of Polje Čepić, recorded during field survey in 2004 and 2005 as part of the *Palaeolithic-Mesolithic Settlement of the Northern Adriatic* project. At this site were collected only chipped stone artefacts. According to technological and typological characteristics of lithic artefacts they can be attributed to Early Upper Palaeolithic *i.e.*, Aurignacian and generally to Neolithic. Several small test trenches sized 1x1m and 0.5 × 0.5m, total surface area of 6m$^2$ were explored to determine the concentration of finds and level of preservation of cultural layers. Excavation did not record any preserved cultural layer for the Early Upper Palaeolithic nor for the Neolithic period. It seems that the sediment from the excavation plateau has either eroded from the site to the lake or the finds eroded from the upper plateau (Balbo *et al.*, 2006; Komšo *et al.*, 2007).

### Skandališta Cave

Field survey of the Lim Channel was performed during 2006. Among many recorded sites it is necessary to single out the cave site of Skandališta. This is a cave with four entrances located at the southern slopes of the Lim Channel. It is composed of three channels, mainly without sediments with exposed bedrock. Sediment is preserved in the western channel and in the deepest part of the central and eastern channel. One retouched blade and several bones were collected at the surface, while cave bear scratch marks were found on cave walls. No pottery fragments were found. The proximity of Romualdova Cave (approximately 100m), flint tool find and bone remains suggest possible use of the cave during Upper Palaeolithic (Komšo, 2007).

Four test trenches were explored during 2007 and 2008 (trench 1 – 4.5m$^2$, trench 2 – 1m$^2$, trench 2BC – 2m$^2$ and trench 3 – 2m$^2$). Thickness of sediment was between 30cm and 40cm in all trenches. Through these test excavations were collected few chipped stone artefacts, Pleistocene fauna remains (cave bear, horse, rhinoceros), remains of malacofauna (*Mytilus*? and *Monodonta*).

There are several bone breccia remains on the cave walls suggesting that originally the sediment was higher and that post-depositional erosion was significant in this cave. Preliminary archaeological, palaeontological and malacological analyses, as well as recorded sedimentological and stratigraphic data suggest that this cave was used by hunter-gatherers during Upper Palaeolithic. It is not possible to more precisely determine the period when the cave was used on the basis of the finds collected so far, however there are certain indications that this site could be older than the Late Glacial Maximum, what is exceptionally rare in Istria and on the Adriatic Coast in general. Test excavations confirmed Upper Palaeolithic age of this site, however we should emphasise that in trench 3 were recorded disturbed contexts with presence of medieval pottery (Komšo, 2008; Komšo, 2009).

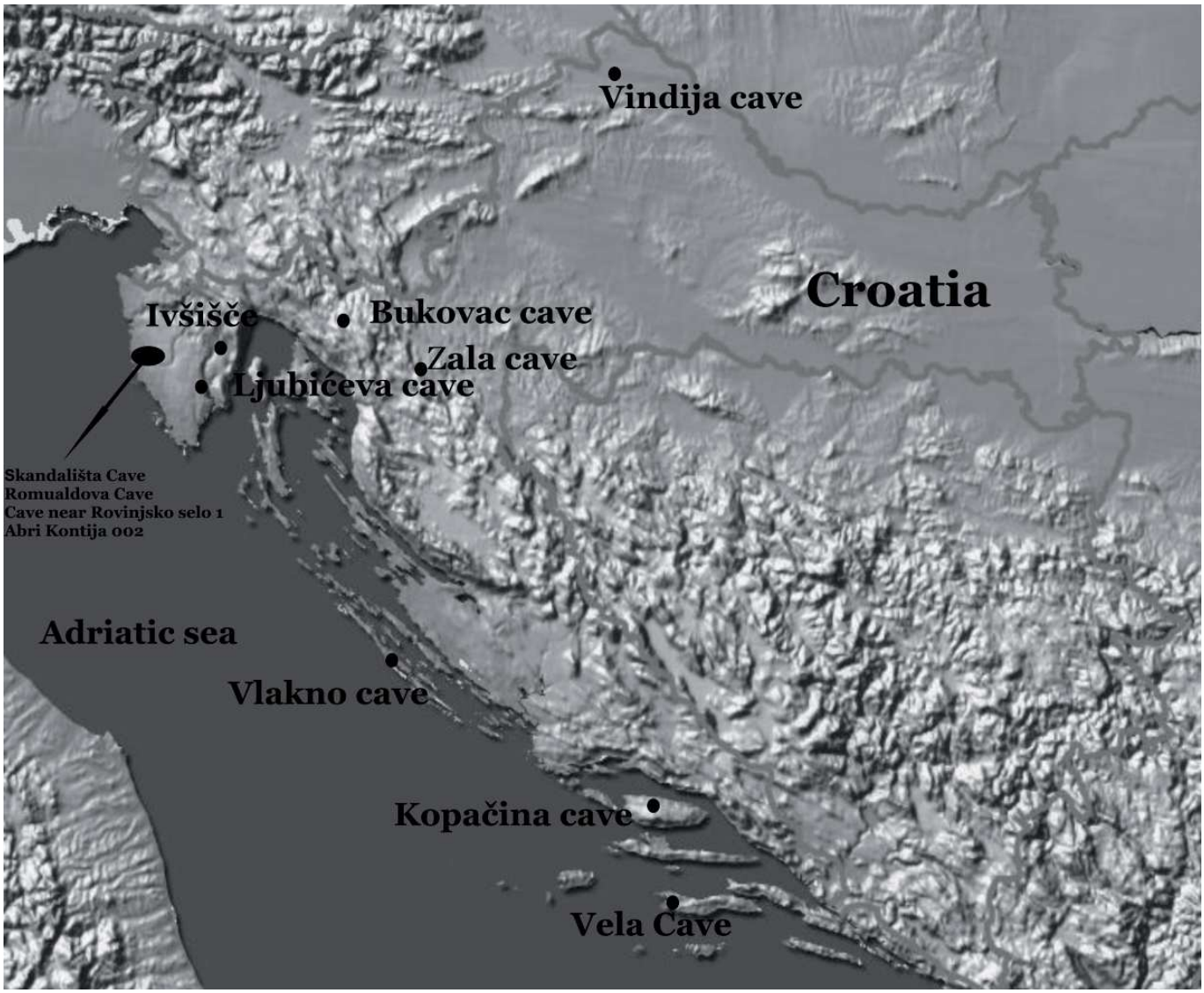


Figure 1 – Location of the sites mentioned in the text

## Romualdova Cave

Romualdova Cave is located on the southern slopes of the most eastern part of the Lim Channel at 120m above sea level. Cave is tunnel-shaped and consists of one channel that occasionally widens into elongated halls, total length of approximately 105m. The entry into the cave has semicircular arch and is oriented towards north. From there goes very narrow and low-ceil channel, which after a few meters widens into elongated wide and spacious channel. This cave is mentioned for the first time in 1590, and it is well-known due to a legend that Saint Romualdo has stayed in this cave. The cave was explored by several researchers from the end of 19$^{th}$ century: Marchesetti, Gnirs and Malez. During 60s and 70s of the 20$^{th}$ century Malez has found archaeological contexts consisting of human and animal bones (particularly numerous cave bear remains), flint stone artefacts and perforated red deer's tooth, generally dated to the Upper Palaeolithic (Malez, 1979). Since these exquisitely interesting finds were not numerous enough for more detailed chronological and cultural determination, revised archaeological research was done during 2007 and 2008 in order to collect samples for absolute dating.

Trench 1 (1.5m × 1.5m), located near Malez's trench in the entrance hall of the cave, was explored in 2007. Fifteen layers were researched out of which some were divided into sub-layers, two features and one disturbed context. These layers can be classified in five basic horizons (A to E), among which horizon C should be attributed to Upper Palaeolithic, while horizons D and E belong to Middle Palaeolithic. This classification only crudely follows Malez's classification from which is quite different in terms of context, which was caused with new significant finds obtained during revised research.

Horizon C contains layers 9a, 9b, 9c and 10. There were relatively numerous finds of Pleistocene fauna and 3 flint stone artefacts. According to collected finds and stratigraphic position of the layers we can determine general chronological interpretation of horizon C. According to stratigraphic position and numerous palaeontological and few archaeological finds, layers 9a, 9b, 9c, 9f1 and 10 can be generally dated to the Upper Palaeolithic, maybe to the period before Late Glacial Maximum. This horizon, with small corrections, in principal corresponds to Malez's horizon C, which he has dated to Würm 3 *i.e.*, to the Upper Pleistocene (Komšo, 2008).

Revised excavation of Romualdo's cave began in 2007 and continued in 2008. Malez's western trench in the entrance hall, which is located next to trench 1 from 2007, was cleaned in order to establish if the preserved layers are from Middle Palaeolithic and to find out if Malez performed any research of Middle Palaeolithic layers. Furthermore, trench 2 (1.5 × 1.5m) in the entrance hall was also explored. The same classification of five basic horizons (A-E) was found in both trenches, as in the previous excavation from 2007. Remains of fauna and lithic artefacts were found in the Upper Palaeolithic context of horizon C (Komšo, 2009).

### Cave near Rovinjsko selo 1

Cave near Rovinjsko selo 1 is the biggest cave in the series of four caves and rock-shelters located just below the Kamenjača peak on the southern side of the Lim Channel. This is a big cave, oriented towards north-west. It consists of two parts, the entrance which is actually a rock-shelter which opens to the inside hall in the southern part. The entry to the rock shelter is 4m high and 25m wide, while the rock-shelter itself is 7.5m deep. At the surface there is mainly bedrock and the sediment is preserved only in the western part of the rock-shelter. The entry into the inside, cave hall is 1.3, high, 4.5m wide and partially closed with drywall. Interior hall is entirely filled with sediment, and breccia is found on the edges. Position and the size of the cave, as well as several archaeological and paleontological finds suggested that humans were possibly using the cave during prehistory, and test excavation was done to confirm these assumptions (Komšo, 2008). Trench was explored in front of the cave entrance, sized 1.5m × 1.5m, 130cm deep to the bedrock. There are four layers and two features that can be divided in three horizons (A, B and C), out of which horizons B and C can be attributed to the Upper Palaeolithic.

Horizon B includes layers 2 and 3 and feature 3F1. Feature 3F1 is a hearth which enters into northern profile, with maximum thickness of 10cm out of which were explored 70 x 60 cm. Numerous lithic artefacts were collected, as well as fauna remains and shells of marine molluscs. According to collected finds and stratigraphic position, horizon B can generally be dated to the period of Mesolithic or to the very end of the Upper Palaeolithic (Late Epigravettian).

Horizon C includes layer 4. Bedrock is reached at the bottom of the trench. Only a few small bone fragments were collected in this layer. According to collected finds and stratigraphic position, horizon C can generally be dated to the Pleistocene period (Komšo, 2008).

### Ljubićeva Cave

Excavations of this cave started during 2008 and have continued in 2009 and 2010. The entire surrounding area is located at 195m of altitude, while the entrance to the cave is situated 25m below. Ljubićeva Cave is a complex of several halls and pits connected through different channels and other communications which are characteristic for the carst area. Two trenches were researched, one at the big entrance hall and the other in the smaller eastern hall. The trench in the great entrance hall resulted in only sporadic finds of animal fauna, however research in the other trench gave exquisitely rich finds from two Upper Palaeolithic horizons – first one dated with an absolute date to 11.350 ± 50 uncal BP (GRA-40926), and the second one to 13.230 ± 70 uncal BP (Beta-249371) (Percan *et al*., 2009). Horizons C and D belong to the Late Upper Palaeolithic, as is confirmed with the radioactive carbon analysis and with the accompanying archaeological material (flint stone tools, ornaments made from perforated marine snail shells *Cyclope neritea,* fauna remains, shells of land and marine molluscs. Majority of raw material was collected from local and regional sources, however it is important to emphasise that a large quantity of raw material was collected from remote sources, particularly in case of high-quality red chert from north Italy (so called *scaglia rossa* and/or *scaglia variegata*). Preliminary results of raw material point to great mobility of hunter-gatherers during the Late Epigravettian and are very much in accord with the other sites from the same period in this region (Šandalja II, Vešanska Cave, Pupićina Cave, Nugljanska Cave). Different tools were found in Ljubićina Cave: backed bladelets, backed points, burins, sidescraperes, endscrapers, retouched flakes and blades. Furthermore, there were numerous finds of different cores, as well as of remains from the entire process of their reduction (Percan *et al*., 2009).

### Abri Kontija 002

A rock shelter was discovered during field survey of Lim Channel in 2007, which was named Abri Kontija 002. This is a big rock shelter, sized 25 × 8m, located on the north side of the Lim Channel. Small test excavation was done in 2008 in order to establish if there are any archaeological layers. Two small test trenches sized 0.4 × 0.4m were excavated. Both trenches were excavated down to 40cm of depth and in them were found approximately 20 flint stone artefacts, numerous fauna finds and one sea snail shell *Columbella rustica*. According to these finds, the layers could generally be dated to the period of Late Upper Palaeolithic (Komšo, 2009).

## Research in Dalmatia

### Vlakno Cave

Vlakno Cave was discovered in 2003. It is located in central part of island Dugi otok, at its narrowest part. It is approximately 100m away from the sea, at an altitude of 50m. Surface of the cave is approximately 30m$^2$ with the entrance oriented towards south-west. Until now were determined Late Upper Palaeolithic and Mesolithic layers. Test trench was explored in 2004 (surface 1m$^2$, depth 1m). Numerous stone artefacts were found, as well as remains of continental and marine fauna (Brusić, 2005). The trench from 2004 was expanded in 2007 to the total surface of 5m$^2$ with further deepening of the trench. In 2007 was discovered a layer of volcanic ash from Phlegraean Fields near Naples (Brusić, 2008), which is dated to ca. 14900 BP (Deino *et al*., 2004). According to the age of the volcanic ash from the cave and one C14 date Upper Palaeolithic layers from Vlakno can be placed between 14.900 BP and 10.160 uncal BP (Z-3383) (Brusić, 2005, 2008) and therefore can be attributed to Late Epigravettian with characteristic thumbnail endscrapers and backed bladelets. Personal ornaments produced from

perforated red deer teeth and marine snail shells *Cyclope neritea* and *Columbella rustica* were found in the Upper Palaeolithic layers (Brusić, 2008).

### Kopačina Cave

Kopačina Cave is located on the island of Brač in central Dalmatia. It was continuously excavated from 1978 to 1993. However, only recently was done the analysis of lithic asseblage from these old excavations, which showed that the finds geochronologically belong to the Late Glacial, and culturally to the Late Epigravettian (Vukosavljević *et al*., 2011). Revised excavations were done from 2006 to 2008 (Kliškić, 2007, 2008, 2009).

### Vela Cave

Vela Cave is a multilayered site with exquisitely long stratigraphic sequence with Late Upper Palaeolithic, Mesolithic, Neolithic, Copper Age and Bronze Age layers. It is located in Southern Dalmatia on the island of Korčula. This is a big cave (approximate surface of 1100m$^2$) with an entrance oriented towards south-west, located approximately 100m from the sea at an altitude of 130m (Čečuk & Radić, 2005). Late Upper Palaeolithic layers were dated with two C14 dates to 16.140 ± 60 uncal BP (VERA-2338) and 12.260 ± 40 uncal BP (VERA-2346), and should be attributed to Late Epigravettian (Čečuk & Radić, 2005). In one of Epigravettian layers was found fired clay animal figurine, which is actually the first example of Palaeolithic mobiliary art in the Eastern Adriatic (Čečuk & Radić, 2005). A layer of tephra was determined among Pleistocene layers in Vela Cave (same as in Vlakno), which is approximately 10cm thick and is related to the eruption from the Phlegraean Fields approximately before 14.900 BP (40Ar/39Ar). One tephra ash-lens was found bellow Neapolitan Yellow Tuff, which is related to the eruption of Ponti Rossi pyroclastics that happened approximately 15.900 BP (40Ar/39Ar) (Radić *et al*., 2008).

Research has again started in 2006 with the intent to reach the bedrock and determine the age of the deepest layers (Radić 2008).

## Research in continental Croatia in regions of Lika, Gorski kotar and Hrvatsko Zagorje

### Bukovac Cave

Bukovac Cave is located in continental region of Gorski Kotar. It is situated in a mountain region within the border zone between the Mediterranean and continental zones of Croatia. The cave was first test excavated by T. Kormos (1912) and L. Szilágy in 1911 (Malez, 1979). Faunal remains and a one bone point have been found. The point was assigned to different cultures (Malez, 1979), but today the overriding view is that it belongs to Aurignacian or Olschewian (Malez, 1979; Montet-White, 1996; Horusitzky, 2004; Karavanić & Janković, 2007). The base of the point is missing, but based on the sudden thinning of the widest part it can be argued that it was a so-called Mladeč point. Therefore, based solely on the single bone point assignment of the industry to the Upper Palaeolithic is questionable, although likely. One of the major aims of the excavation in 2010 (Janković *et al*., n.d.), was to determine the layer from which this find comes, based on the stratigraphy by T. Kormos (1912), and obtain material for dating. Thus far, a single date confirms the Aurignacian age of the layer from which probably originated bone point (I. Janković, personal communication).

### Zala Cave

Zala Cave is located in continental region of Lika at an altitude of 207m on the left side of the Bistrac canyon, oriented towards east (Karavanić *et al*., 2007). Initial short test excavations were undertaken in 2000 (Perkić, 2002), while systematic excavations started in 2005 and are still ongoing (Karavanić *et al*., 2007; Karavanić *et al*., n.d.). This multilayered site contains Late Upper Palaeolithic, Mesolithic, Bronze Age, Iron Age / Ancient Roman and Middle Age horizons. The Late Upper Palaeolithic layers are dated by $^{14}$C AMS to 13.840 ± 50 uncal BP (BETA-228734), placing them in the Late Glacial (Karavanić *et al*., 2007; Karavanić *et al*., 2008). The preliminary results of geoarchaeological analyses are providing interesting information about palaeoclimatic conditions of the region during the late phases of the Late Glacial and the beginning of the Holocene (see Boschian *et al*., 2010). Absolute dates and a lithic industry characterised by backed bladelets and thumbnail endscrapers suggest they belong to the Epigravettian (Karavanić *et al*., 2007). Several perforated marine snail shells of *Cyclope neritea* and a fragment of *Pecten jacobaeus* were found in Epigravettian layers, which present first unequivocal proof of contact between coast and continental hinterlands (Karavanić, 2010).

### Vindija

Vindija cave in northwestern Croatia has played an important role in numerous debates on the pattern of the Middle-to-Upper Palaeolithic transition in Central Europe (see Karavanić, 2007). The site is situated in northwestern Croatia, 2km west of the village of Donja Voća. The cave is more than 50m deep, up to 28m wide and more than 10m high. S. Vuković , who first visited the site in 1928, excavated the cave for more than thirty years with some interruptions. M. Malez started systematic excavations at Vindija in 1974, and fieldwork continued every season until 1986. During this period most of the lithic and faunal material as well as all of the fossil human remains known from the site were recovered.

Several Neandertal samples from complex G were directly dated by radiocarbon AMS, and samples from level G1 were redated, using a more accurate technique, to about 33 ka BP (Higham *et al*., 2006). Neandertals from this level are morphologically remarkably similar, to Neandertals from older level (G3). Recently, Vindija morphological pattern has been seen as reflecting small amounts of modern human biological influence in a late Neandertal population (Smith *et al*., 2005; Cartmill & Smith, 2009; Janković *et al*., 2006, 2011). Most recently the biological focus on Vindija Neandertals has shifted from morphology to paleogenetics (Green *et al*., 2010).

Four new studies discuss Middle/Upper Palaeolithic interface

at Vindija Cave in some length utilizing different data sets: taphonomic analysis (Brajković & Miracle, 2008; Karavanić & Patou-Mathis, 2009), refitting of lithic artefacts (Bruner, 2009), and analysis of pseudotools, typology of lithic artefacts, bone artefacts and site formation processes (Zilhão, 2009). Some new information and interpretations concerning Upper Palaeolithic period at this site were also presented (Brajković & Miracle, 2008; Bruner, 2009; Zilhão, 2009). Most recently, Karavanić and Smith (2011) discuss alternative interpretations of transitional evidence from Vindija from various perspectives (archaeological, paleoanthropological, and genetic).

## Conclusion

Several Upper Palaeolithic sites in Croatia were excavated in the past five years in Istria, Dalmatia, Lika and Gorski Kotar. Most excavations were done in Istria where together with revision of stratigraphy in Romualdova Cave were found new Palaeolithic sites, out of which at least one could be dated to Early Upper Palaeolithic.

Revised excavations of Bukovac Cave in Gorski Kotar and dating of the layer from which probably originated bone point, have shown Aurignacian age and therefore confirmed determination of the point to Aurignacian.

In spite of the fact that excavations in Vindija in Hrvatsko Zagorje were done long time ago, work on this material is still in progress and the material continues to raise scientific interest due to interesting association of fossil humans and material culture.

Important examples of personal ornaments were collected in Epi-Palaeolithic layers of Vlakno site in Dalmatia, and the shell fragment of *Pecten jacobaeus* and perforated sea snail shells *Cyclope nertea* in Zala Cave in Lika point to possible contacts and migrations of Late Upper Palaeolithic populations between Adriatic coast and hinterland.

In spite of increase in number of excavations in Croatia in the past years, the Upper Palaeolithic period has not yet been sufficiently explored in this region. This is particularly true for the Early Upper Palaeolithic sites, which are very rare (see Karavanić 2009). Further field surveys and excavations of the Upper Palaeolithic sites in Croatia will be of great importance for testing numerous hypotheses and for gaining better understanding of adaptation processes of Upper Palaeolithic hunter-gatherers at the crossroad of Mediterranean, Central Europe and Balkans.

## References


BALBO A., KOMŠO D. & MIRACLE P.T. (2006). Prehistory of the open karst, further discoveries from the geoarchaeological survey of Polje Čepić, Croatia. *Histria archaeologica* 35(2004) : 1-40.

BOSCHIAN G., ŠOŠIĆ R., GEROMETTA K. & KARAVANIĆ I. (2010) - Archaeology and palaeo-speleology at the cave Zala. In: *The first Croatian Speleoligical Congress, Abstracts*. Zagreb, Croatian Speleological Federation.

BRAJKOVIĆ D. & MIRACLE P.T. (2008) - Middle Palaeolithic and early Upper Palaeolithic subsistence practices at Vindija cave, Croatia. In: D. Mihailović (ed.), *The Palaeolithic of the Balkans*. Oxford, Archaeopress, p. 107-116.

BRUNER K.M. (2009) - *Testing Stratigraphic Integrity of Upper and Middle Paleolithic Deposits in Vindija Cave (Croatia): A Chipped Stone Refitting Analysis*. Unpublished Master Theses, University of Kansas, Lawrence.

BRUSIĆ Z. ( 2005**) -** Pećina Vlakno. *Hrvatski arheološki godišnjak* 1(2004): 197-199.

BRUSIĆ Z. (2008) - Pećina Vlakno. *Hrvatski arheološki godišnjak* 4(2007): 400-403.

CARTMILL M. & SMITH F. (2009) - *The Human Lineage*. Hoboken, Wiley Blackwell.

ČEČUK B. & RADIĆ D. (2010) - *Vela spila. Višeslojno pretpovijesno nalazište Vela Luka – otok Korčula*. Vela Luka, Centar za kulturu Vela Luka.

DEINO A.L., ORSI G., de VITA S. & PIOCHI M. (2004) - The age of the Neapolitan Yellow Tuff caldera-forming eruption (Campi Flegrei caldera – Italy) assessed by $^{40}Ar/^{39}Ar$ dating method. *Journal of Volcanology and Geothermal Research* 133: 157-170.

GREEN R., KRAUSE J., BRIGGS A., MARICIC T., STENZEL U., KIRCHER M., PATTERSON N., LI H., ZHAI W., FRITZ M., HANSEN N., DURAND E., MALASPINAS A-S., JENSEN J., MARQUES-BONET T., ALKAN C., PRÜFER K., MEYER M., BURBANO H., GOOD J., SCHULTZ R., AXIMU-PETRI A., BUTTHOF A., HÖBER B., HÖFFNER B., SIEGEMUND M., WEIHMANN A., NUSBAUM C., LANDER S., RUSS C., NOVOD N., AFOURTIT J., EGHOLM M., VERNA C., RUDAN P., BRAJKOVIĆ D., KUCAN Ž., GUŠIC I., DORONICHEV V., GOLOVANOVA L., LALUEZA-FOX C., DE LA RASILLA M., FORTEA J., ROSAS A., SCHMITZ R., JOHNSON P., EICHLER E., FALUSH D., BIRNEY E., MULLIKIN J., SLATKIN M., NIELSEN R., KELSO J., LACHMANN M., REICH D. & PÄÄBO S. (2010) - A draft sequence of the Neandertal genome. *Science* 328: 710-725.

HIGHAM T., RAMSEY C.B., KARAVANIĆ I., SMITH F.H. & TRINKAUS E. (2006) - Revised direct radiocarbon dating of the Vindija G1 Upper Paleolithic Neandertals. *Proceedings of the National Academy of Sciences of the United States of America* 103(3): 553 – 557.

HORUSITZKY F.Z. (2004) - Les artefacts en os et bois de cerf à Bukovac, Lokve (Croatie): Une seconde flûte possible? Relations entre les chasseurs de Lokve et les montagnards d'Olcheva au début du Paléolithique supérieur. *Arheološki vestnik* 55 : 9-37.

JANKOVIĆ I., KARAVANIĆ I, AHERN J.C.M., BRAJKOVIĆ D, MAUCH LENARDIĆ J. & SMITH F.H. (2006) - Vindija Cave and the modern human peopling of Europe. *Collegium Antropologicum* 30: 457-466.

JANKOVIĆ I., KARAVANIĆ I., AHERN J.C.M., BRAJKOVIĆ D., MAUCH LENARDIĆ J. & SMITH F.H. (2011) - Archaeological, paleontological and genomic perspectives on late European Neandertals at Vindija cave, Croatia. In: S. Condemni and G.-C. Weniger (eds.), *Continuity and Discontinuity in the Peopling of Europe: One Hundred Fifty Years of Neanderthal Study*, *Vertebrate Paleobiology and Paleoanthropology*. New York, Springer, p. 299-313.

JANKOVIĆ I., KARAVANIĆ I., MIHELIĆ S., AHERN J.C.M. & SMITH F.H. (n.d.) - Bukovac pećina – istraživanja 2010. *Hrvatski arheološki godišnjak* 7(2010), in press.

KARAVANIĆ I. (2010) - Špilja Zala. In: L. Bede and L. Čučković (eds.), *Ledeno doba*. Karlovac, Gradski muzej Karlovac, p. 26-28.

KARAVANIĆ I. (2007) - The Middle/Upper Paleolithic interface in Croatia. In: J. Riel-Salvatore and G.A. Clark (eds.), *New Approaches to the Study of Early Upper Paleolithic «Transitional» Industries in Western Eurasia: Transitions great and small*. Oxford, Archaeopress (BAR International Series 1620), p. 75-89.

KARAVANIĆ I. (2009) - Adriatic coast of Croatia and its hinterland from 50.000 to 25.000 BP. In: *The Mediterranean from 50 000 to 25 000 BP: Turning points and new directions (M. Camps and C. Szmidt)*. Oxford, Oxbow Books, p. 163-178.

KARAVANIĆ I & JANKOVIĆ I. (2007) - Srednji i rani gornji paleolitik u Hrvatskoj/Middle and early Upper Paleolithic in Croatia. *Opuscula archaeologica* 30: 21-54.

KARAVANIĆ I. & PATOU-MATHIS M. (2009) - Middle/Upper Paleolithic interface in Vindija Cave (Croatia): New results and interpretations. In: M. Camps and P. Chauhan (eds.), *Sourcebook of Paleolithic Transitions: Methods, Theories and Interpretations*. New York: Springer, p. 397-405.

KARAVANIĆ I. & SMITH F.H. (2011) – „Research history and alternative interpretations of the Middle/Upper Paleolithic interface in Croatia". Paper presented at 46th Annual Meeting of Society for American Archaeology, March 30 to April 02, 2011, Sacramento, CA.

KARAVANIĆ I., AHERN J.C.M., ŠOŠIĆ R. & VUKOSAVLJEVIĆ N. (2007) - Pećina Zala. *Hrvatski arheološki godišnjak* 3(2006): 213-216.

KARAVANIĆ I., ŠOŠIĆ R., VUKOSAVLJEVIĆ N. & AHERN J. (2008) - Sustavna arheološka istraživanja špilje Zale kod Tounja. *Modruški zbornik* 2 : 31-35.

KARAVANIĆ I., VUKOSAVLJEVIĆ N., ŠOŠIĆ KLINDŽIĆ R. & AHERN J.M.C. (n.d.) - Špilja Zala. *Hrvatski arheološki godišnjak* 6(2009), in press.

KLIŠKIĆ D. (2007) - Špilja Kopačina. *Hrvatski arheološki godišnjak* 3(2006): 443-445.

KLIŠKIĆ D. (2008) - Špilja Kopačina. *Hrvatski arheološki godišnjak* 4(2007): 528-530.

KLIŠKIĆ D. (2009) - Špilja Kopačina. *Hrvatski arheološki godišnjak* 5(2008): 648-650.

KOMŠO D., BALBO A.L. & MIRACLE P.T. (2007) - Čepićko polje. *Hrvatski arheološki godišnjak* 3(2006): 225-228.

KOMŠO D. (2007) - Limski kanal. *Hrvatski arheološki godišnjak* 3(2006): 240-242.

KOMŠO D. (2008) - Limski kanal. *Hrvatski arheološki godišnjak* 4(2007): 264-268.

KOMŠO D. (2009) - Limski kanal. *Hrvatski arheološki godišnjak* 5(2008): 38-342.

KORMOS T. (1912) - Die ersten Spuren des Urmenschen in Karst-Gebirge. *Földtani Közlöny* 52: 97-104.

MALEZ M. (1979) - Nalazišta paleolitskog i mezolitskog doba u Hrvatskoj. In: A. Benac (ed.), *Praistorija jugoslavenskih zemalja*, vol. I. Sarajevo: Svjetlost, p. 227 – 276.

MONTET-WHITE A. (1996) - *Le Paléolithique en ancienne Yougoslavie*. Grenoble, Jérôme Millon.

PERCAN T., KOMŠO D. & BEKIĆ L. (2009) - Ljubićeva pećina. *Hrvatski arheološki godišnjak* 5(2008): 344-347.

PERKIĆ D. (2002) - Špilja Zala. *Speleo'zin* 15: 44-47.

RADIĆ D. (2008) - Vela spila. *Hrvatski arheološki godišnjak* 4(2007): 594-595.

RADIĆ D., LUGOVIĆ B. & MARJANAC Lj. (2008) - Napuljski žuti tuf (NYT) iz pleistocenskih naslaga u Veloj spili: dragocjeni marker prijelaza iz paleolitika u mezolitik. *Opuscula archaeologica* 31: 7-26.

SMITH F.H., JANKOVIĆ I. & KARAVANIĆ I. (2005) - The assimilation model, modern human origins in Europe, and the extinction of Neandertals. *Quaternary International* 137: 7-19.

VUKOSAVLJEVIĆ N., PERHOČ Z., ČEČUK B. & KARAVANIĆ I. (2011) - Kasnoglacijalna industrija lomljenog kamena pećine Kopačine. *Vjesnik za arheologiju i povijest dalmatinsku* 104, *in press*.

ZILHÃO J. (2009) - Szeletian, not Aurignacian: A review of the chronology and cultural associations of the Vindija G1 Neandertals. In: M. Camps and P. Chauhan (eds), *Sourcebook of Paleolithic Transitions*. New York, Springer, p. 407-426.